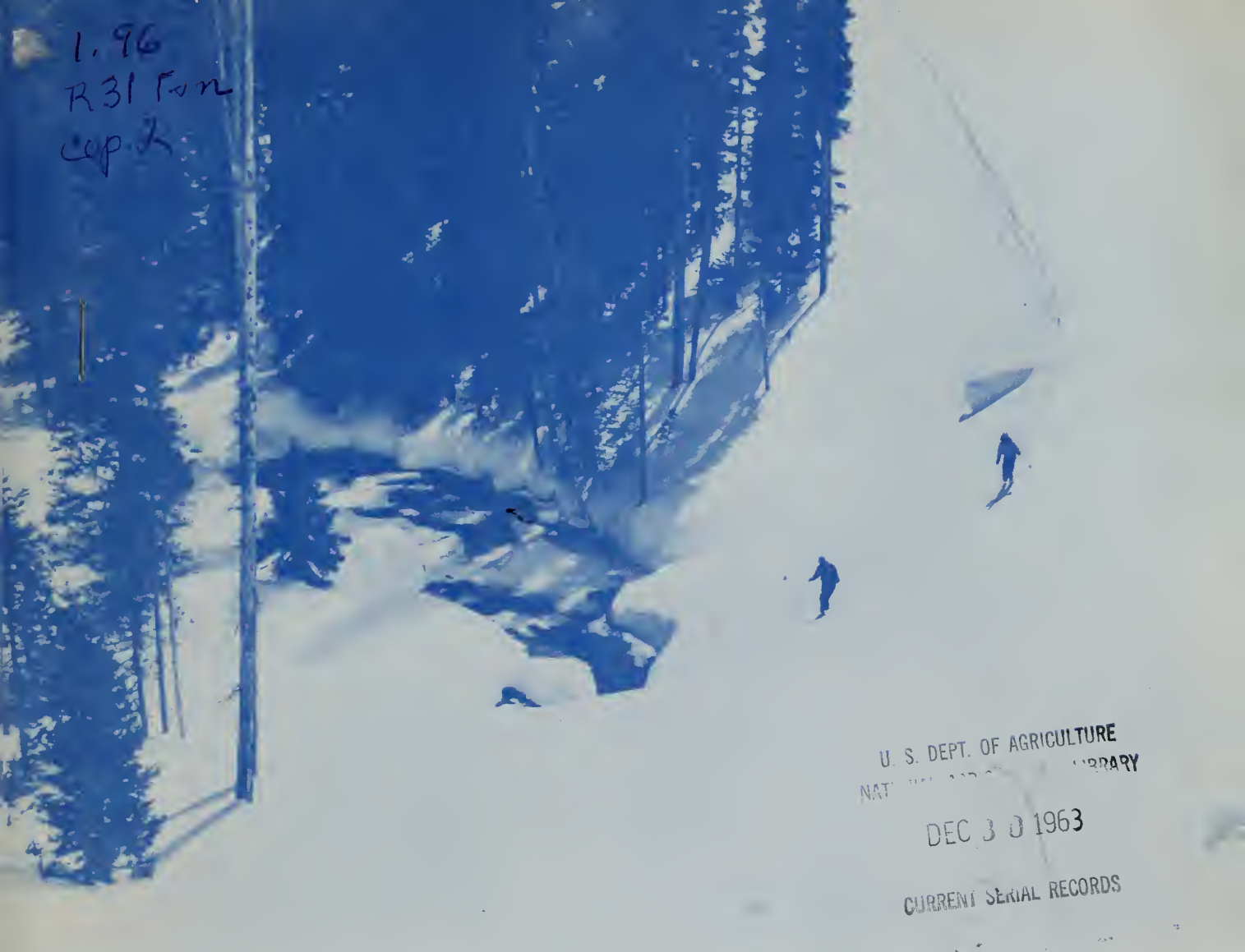


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# FALL WATER SUPPLY SUMMARY for NEVADA

UNITED STATES DEPARTMENT of AGRICULTURE<sup>✓</sup> SOIL CONSERVATION SERVICE,  
and  
NEVADA DEPARTMENT of CONSERVATION and NATURAL RESOURCES  
DIVISION of WATER RESOURCES

Data included in this report were obtained by the agencies named above in cooperation with the Federal, State and private organizations listed on the last page of this report.

AS OF  
OCT. 1, 1963

# UNITED STATES DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

## To Recipients of Water Supply Outlook Reports:

The climate of the cultivated and populated areas of the West is characterized by relatively dry summer months. Such precipitation as occurs falls mostly in the winter and early spring months when it is of little immediate benefit to growing crops. Most of this precipitation falls as mountain snow which stays on the ground for months, melting later to sustain streamflow during the period of greatest demand during late spring and summer. Thus, nature provides in mountain snow an imposing water storage facility.

The amount of water stored in mountain snow varies from place to place as well as from year to year and accordingly, so does the runoff of the streams. The best seasonal management of variable western water supplies results from advance estimates of the streamflow.

A snow survey consists of a series of about ten samples taken with specially designed snow sampling equipment along a permanently marked line, up to 1000 feet in length, called a snow course. The use of snow sampling equipment provides snow depth and water equivalent values for each sampling point. The average of these values is reported as the snow survey measurement for a snow course.

Snow surveys are made monthly or semi-monthly beginning in January or February and continue through the snow season until April, May or June. Currently more than 1400 western snow courses are measured each year. These measurements furnish the key data for water supply forecasts.

Streamflow forecasts are obtained by a comparison of total or maximum snow accumulation, as measured by snow water equivalent, to the subsequent spring and summer or snowmelt season runoff over a period of years. The snow water equivalent measured in selected snow courses provides most of the index to the streamflow forecast for the following season. More accurate forecasts are usually obtained when other factors such as soil moisture, base flow and spring precipitation are considered and included in the forecast procedure. Early season forecasts assume average climatic conditions through the snowmelt season.

Listed below are the Federal-State-Private Cooperative Snow Survey and Water Supply Forecast reports available for the West which contain detailed information on snow survey measurements, streamflow forecasts, reservoir storage, soil moisture and other guide data to water management and conservation decisions. Soil Conservation Service Reports may be secured from Water Supply Forecasting Unit, Soil Conservation Service, P.O. Box 4170, Portland 8, Oregon.

## PUBLISHED BY SOIL CONSERVATION SERVICE

<u>REPORTS</u>	<u>ISSUED</u>	<u>LOCATION</u>	<u>COOPERATING WITH</u>
RIVER BASINS			
WESTERN UNITED STATES	MONTHLY (FEB.-MAY)	PORTLAND, OREGON	ALL COOPERATORS
STATES			
ALASKA	MONTHLY (MAR.-MAY)	PALMER, ALASKA	ALASKA S.C.D.
ARIZONA	SEMI-MONTHLY (JAN.15 - APR.1)	PHOENIX, ARIZONA	SALT R. VALLEY WATER USERS ASSOC. ARIZ. AGR. EXP. STATION
COLORADO AND NEW MEXICO	MONTHLY (FEB.-MAY)	FORT COLLINS, COLORADO	COLO. STATE UNIVERSITY COLO. STATE ENGINEER N. MEX. STATE ENGINEER
IDAHO	MONTHLY (JAN.-JUNE)	BOISE, IDAHO	IDAHO STATE RECLAMATION ENGINEER
MONTANA	MONTHLY (JAN.-JUNE)	BOZEMAN, MONTANA	MONT. AGR. EXP. STATION
NEVADA	MONTHLY (JAN.-MAY)	RENO, NEVADA	NEVADA DEPT. OF CONSERVATION AND NATURAL RESOURCES - DIVISION OF WATER RESOURCES
OREGON	MONTHLY (JAN.-JUNE)	PORTLAND, OREGON	OREG. STATE UNIVERSITY OREGON STATE ENGINEER
UTAH	MONTHLY (JAN.-JUNE)	SALT LAKE CITY, UTAH	UTAH STATE ENGINEER
WASHINGTON	MONTHLY (FEB.-JUNE)	SPOKANE, WASHINGTON	WN. STATE DEPT. OF CONSERVATION
WYOMING	MONTHLY (FEB.-JUNE)	CASPER, WYOMING	WYOMING STATE ENGINEER

## PUBLISHED BY OTHER AGENCIES

<u>REPORTS</u>	<u>ISSUED</u>	<u>AGENCY</u>
BRITISH COLUMBIA	MONTHLY (FEB.-JUNE)	WATER RIGHTS BR., DEPT. OF LANDS, FORESTS AND NATURAL RESOURCES, PARLIAMENT BLDG., VICTORIA, B.C., CANADA
CALIFORNIA	MONTHLY (FEB.-MAY)	CALIF. DEPT. OF WATER RESOURCES, P.O. BOX 388, SACRAMENTO, CALIF.

# FALL WATER SUPPLY SUMMARY for NEVADA

*Report prepared by*

MANES BARTON

*and*

ROY E. MALSOR, JR.

SOIL CONSERVATION SERVICE  
1479 SOUTH WELLS AVENUE  
RENO, NEVADA

OCTOBER 8, 1963

*Issued by*

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STATE CONSERVATIONIST  
SOIL CONSERVATION SERVICE  
RENO, NEVADA

HUGH A. SHAMBERGER

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NATURAL RESOURCES  
CARSON CITY, NEVADA





## FALL WATER SUPPLY SUMMARY

### FOR NEVADA

October 1, 1963

The old saying "all is well that ends well" was dramatically displayed during the 1962-63 water year. Although none of the hydrologic occurrences, such as, mid winter floods, near record low, mid winter mountain snowpack and one of the wettest springs on record were unusual in themselves; their combination in one water year was. The product of this unique combination was an ample 1963 irrigation season water supply and good reservoir storage carryover for the 1963-64 water year.

Nevada water users had a good crop year. Hay production was above average even though the several cuttings were delayed in most areas due to cool spring and summer temperatures and above average precipitation. Range forage held up well into the late summer.

April 1-July 31, 1963 streamflow ranged from 96-107 percent of average in the Humboldt to 109-144 percent average on east slope Sierra streams. Some of the smaller streams, such as, Martin Creek near Paradise and the Owyhee stations had below average April-July flows ranging from 60-81 percent.

Heavy spring precipitation (April-June) in excess of 200 percent of normal except for the extreme southern part of the state, coupled with below normal temperatures augmented snow melt yields from the below normal April 1 mountain snow pack. In addition, most streams had better than usual late season flow.

Water demand from Nevada's principal reservoirs was less than normal due to the above conditions. As a result reservoir storage which usually drops about 240,000 acre feet from May 1 to October 1 only dropped 137,000 acre feet from May 1, 1963 to October 1, 1963.

On October 1, 1963 Nevada's seven principal reservoirs exclusive of Lake Mead and Mohave held 707,000 acre feet. This is 97 percent of average and 52 percent of usable capacity. Lake Tahoe which registered large gains during the winter, particularly the January 29-February 1 flood, continued to rise during the spring and summer months. On October 1, Lake Tahoe held 396,000 a.f. at elevation 6226.30.

Until January 1, 1964, when the results of the first snow surveys of the winter season are available it is difficult to predict next year's irrigation season water supply outlook. One particularly favorable factor is that October 1, 1963 reservoir storage is better than at any time during the 1959-60, 1960-61, and 1961-62 water years. Normal to above normal fall precipitation, if such occurs, can be considered as a plus factor.

The first 1964 Water Supply Outlook Report will be issued on January 8, 1964. It will be followed by subsequent monthly reports on February 8, 1964, March 8, 1964, April 8, 1964, and May 8, 1964. These reports will contain the latest snow survey precipitation, reservoir, and soil moisture data along with April - July, 1964 stream forecasts and dates of specified low flow amounts.





APRIL-JULY 1963  
NEVADA STREAMFLOW FORECASTS  
and  
OBSERVED STREAMFLOW

The following table contains April-July forecasts made during the past winter except as otherwise noted. Observed streamflow amounts are provisional and were furnished by the U. S. Geological Survey and other agencies.

	April-July, Streamflow Thousand Acre Feet						
	Forecast				Observed		
	Feb.	Mar.	Apr.	May*	Observed:15-Yr. : 1963		
	1, 1963	1, 1963	1, 1963	1, 1963	Apr-July: Av.	as %	
					1963**:	1943-57:15-Yr.	Av.
Owyhee R. nr. Gold Cr., Nev. <sup>1</sup>	5	4	3	3 (15)	15	27	56
Owyhee R. nr. Owyhee, Nev. <sup>1</sup>	15	15	15	15 (65)	70	86	81
Lamoille Cr. nr. Lamoille, Nev.		13	15	20 (30)	30	28	107
So. Fk. Humboldt nr. Elko, Nev.		15	17	30 (73)	75	74	101
Humboldt R. at Palisade, Nev.	40	35	40	40 (204)	216	225	96
Humboldt R. at Comus, Nev.		17	20	20 (131)	140	143	98
Martin Cr. nr. Paradise, Nev.		4	4	4 (8)	10	17	60
E. Walker nr. Bridgeport, Conn. <sup>2</sup>		30	30	35 (83)	88	61	144
West Walker below E. Fk. nr. Coeville, Calif.	65	80	80	95 (166)	173	148	117
E. Carson nr. Gardnerville, Nev.		60	70	95 (189)	212	189	112
E. Carson nr. Gardnerville, Nev. (Date of 200 c.f.s. flow)		6/22	6/25	7/4 (On 6/20/63 date of 200 c.f.s. flow forecast as 8/1)	8/5	7/23	--
W. Carson At Woodfords, Calif.		16	18	25 (***)	***	54	--
Carson R. nr. Carson City, Nev.		35	40	70 (188)	218	184	118
Carson R. at Ft. Churchill, Nev.		25	27	60 (161)	188	171	110
Little Truckee R. above Boca, Cal. <sup>3</sup>		24	25	33 (84)	110	86	128
Truckee R. at Farad, Calif. <sup>3,4</sup>		70	75	100 (213)	277	255	109
Lake Tahoe <sup>3,5</sup>		0.3	0.4	.51 (1.39)	1.87	1.50	125
Surprise Valley Streams		Observed data not yet available					

1. Corrected for storage in Wild Horse Reservoir.

2. For period April through August corrected for storage in Bridgeport Reservoir.

3. Forecast issued by Truckee Basin Water Committee which is composed of Truckee-Carson Irrigation District, Sierra Pacific Power Company and Washoe County Conservation District.

4. Exclusive of Tahoe and corrected for storage in Boca Reservoir.

5. Maximum rise, in feet, from April 1, assuming gates closed.

\* May 1-July 31, 1963 forecast; figure in parentheses provisional observed streamflow.

\*\* Provisional data.

\*\*\*Gage washed out in February, 1963; record incomplete.

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NEVADA  
STATUS OF RESERVOIR STORAGE  
OCTOBER 1, 1963

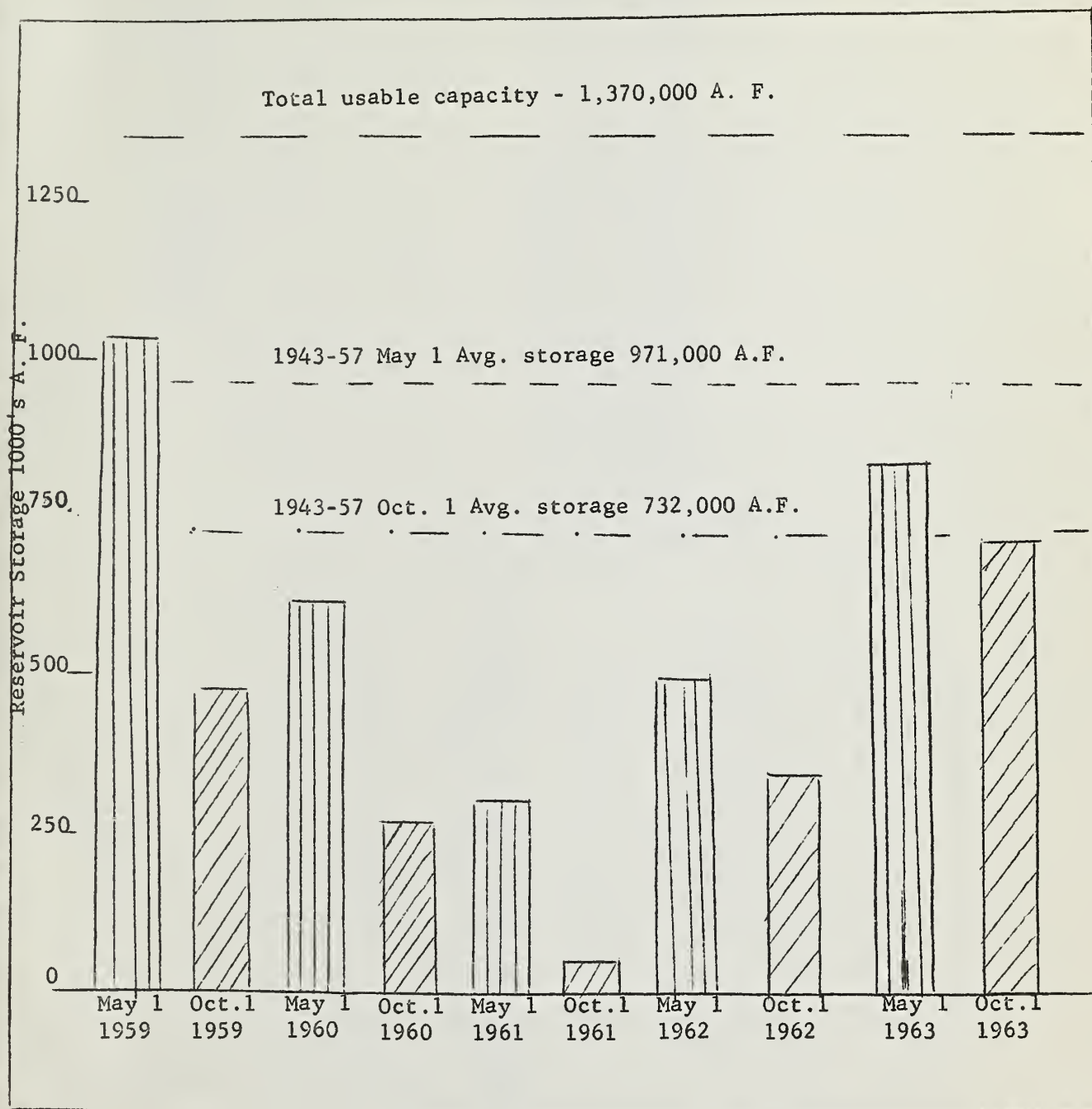
BASIN AND STREAM	RESERVOIR	USABLE CAPACITY (1000 AF)	USABLE STORAGE - 1000 ACRE FEET			
			1963	1962	1961	15-YR AVE. 1943-57
Owyhee	Wild Horse	33	23	19	7	12
Lower Humboldt	Rye Patch	179	72	78	3	83
Colorado	Mohave	1,810	1,406	1,349	1,350	1,397*
Colorado	Mead	27,217	17,371	23,624	17,928	19,595
Tahoe	Tahoe	732	396	81	32	467
Truckee	Boca	41	1	16	3	18
Carson	Lahontan	286	165	116	13	121
West Walker	Topaz	59	28	17	2	17
East Walker	Bridgeport	42	22	17	4	14

\* 1951-57



NEVADA RESERVOIR STORAGE  
1959-63

Based on Wild Horse, Rye Patch, Tahoe  
Boca, Lahontan, Topaz and Bridgeport Reservoir storage data.







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with the Snow Survey"*

## Agencies Cooperating in Collecting Data Contained in this Bulletin

### FEDERAL

- Agricultural Research Service
- Army
- Bureau of Reclamation
- Fish and Wildlife Service
- Forest Service
- Geological Survey
- Navy
- Soil Conservation Service
- Weather Bureau

### STATE

- California Cooperative Snow Surveys
- California Department of Water Resources
- Colorado River Commission of Nevada
- Nevada Association of Soil Conservation Districts
- Nevada Cooperative Snow Surveys
- Nevada Department of Conservation & Natural Resources
  - Division of Water Resources
  - Nevada State Forester-Firewarden
- Oregon Cooperative Snow Surveys
- University of Nevada
- White Mountain Research Station, Univ. of California

### PRIVATE

- Amalgamated Sugar Company
- Kennecott Copper Corporation
- Nevada Irrigation District
- Owyhee Project North Board of Control
- Owyhee Project South Board of Control
- Pacific Gas & Electric Company
- Pershing County Water Conservation District
- Sierra Pacific Power Company
- Squaw Valley Development Company
- Truckee-Carson Irrigation District
- Virginia City Water Company
- Walker River Irrigation District
- Washoe County Water Conservation District

Other organizations and individuals furnish valuable information for the snow survey reports. Their Cooperation is gratefully acknowledged.